

On page 3 of the Office Action, Claims 1-6, 10, 13-15, 27-32, 35, 38-41, and 47 were rejected under 35 U.S.C. §102(b) as being anticipated by Miraki. Specifically, it was stated that Miraki discloses a catheter comprising a first tube (22) having a lumen (40), an inside and outside wall surface, an orifice (62) formed of a flexible material, a second tube (74) having a lumen (78), an inside and outside surface, inserted through and extending distally from the orifice, and being formed of a lubricious material, and a bonding region between the first tube outside surface and the second tube outside surface proximal of the orifice and between the first tube inside surface and the second tube outside surface distal of the orifice.

Claims 1, 27, and 47 as amended recite that the lumen of the first tube is an inflation lumen that is in fluid communication with a dilatation balloon, and it is this lumen into which the second tube is inserted. In Figure 18 of the Miraki reference, however, the first tube (74) is shown inserted into lumen (40) of the first tube (22), which is a guide wire lumen, as described at column 7 lines 62-65 of the Miraki reference. Applicants respectfully submit, therefore, that Claims 1, 27, and 47 are patentable over Miraki et al.

Claims 2-6, 10 and 13-15 are ultimately dependent on, and add elements to, Claim 1. Claims 28-32, 35, and 38-41 are ultimately dependent on, and add additional elements to, Claim 27. Claim 48 is dependent on, and adds additional elements to, Claim 47. Since Applicants submit that Claims 1, 27, and 47 are patentable over Miraki et al. for the reasons given above, Applicants respectfully submit that Claims 2-6, 10, 13-15, 28-32, 35, 38-41, and 48 are also patentable over Miraki et al.

On page 3 of the Office Action, Claims 1-7, 10, 13-16, 27-33, 35, 38-41, and 47-48 were rejected under 35 U.S.C. §102(e) as being anticipated by Sirhan et al. Specifically, it was stated that Sirhan et al. disclose a catheter comprising a first tube, and having a lumen, an inside and outside wall surface, an orifice, being formed of a flexible material, a second tube having a lumen, an inside and outside surface inserted through and extending distally from the orifice and being formed of a lubricious material, and a bonding region between the first tube outside surface and the second tube outside surface proximal of the orifice and between the first tube inside surface and the second tube outside surface distal of the orifice, the first and second tubes including inner and outer layers.

Claim 47, and Claims 1 and 27 as amended, recite that the catheter shaft comprises a bonding region bonding the first tube outer surface to the second tube outer surface proximal of the orifice. Such a bonding arrangement indicates that the first and second tubes are bonded through an overlap joint proximal of the orifice, as opposed to a butt joint. In Figure 6 of the Sirhan et al. application, however, Applicants submit that the second tube (33) forms a butt joint with the first tube (30) proximal of the orifice (42) at the position indicated by the vertical line representing the left end of the length (34). At this position on the catheter shaft (31), a vertical cross-hatch is drawn. To the left of this vertical cross-hatch, the cross-hatches on the shaft of the catheter run from upper left to lower right. To the right of the vertical cross-hatch, however, the cross-hatches run from upper right to lower left. Applicants respectfully submit that this change in cross-hatching indicates that the shaft located to the left of the vertical cross-hatch represents the shaft of the first tube (30), while the shaft located to the right of the vertical cross-

hatch represents the shaft of the second tube (33). Tubes (30) and (33), therefore, are connected in a butt joint as opposed to an overlap joint. Applicants respectfully submit, therefore, that Claims 1, 27, and 47 are patentable over Sirhan et al.

Claims 2-7, 10, and 13-16 are ultimately dependent on Claim 1 and each adds additional elements. Claims 28-33, 35, and 38-41 are ultimately dependent on Claim 27, and each adds additional elements. Claim 48 is dependent on Claim 47 and adds additional elements. Because Applicants submit that Claims 1, 27 and 47 are patentable over Sirhan et al. for the reasons given above, Applicants submit that Claims 2-7, 10, 13-16, 28-33, 35, 38-41, and 48 are also patentable over Sirhan et al.

On page 4 of the Office Action, Claims 8-9, 11-12, 17-26, 34-37, and 42-46 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sirhan et al. in view of Gold et al. Specifically, it was stated that Sirhan discloses all features of the present invention except for the tie-layer disposed between the inside and outside layers. It was noted that Gold et al. disclose a catheter comprising such a tie layer, and that it would have been obvious for one of ordinary skill in the art to use the tie-layer taught by Gold to bond two chemically dissimilar materials.

As stated above, Applicants submit that Sirhan et al. does not disclose the overlap joint between the first and second tubes of the present invention, but instead teaches a butt joint. Upon careful review, it does not appear that the combination of Sirhan et al. with Gold et al. would meet the claims of the present invention.

Bonding the first tube and the second tube through the use of an overlap joint, as opposed to a butt joint, may produce at least two distinct advantages. First, bonding the two tubes together through a butt joint requires the precise lining up of the ends of each

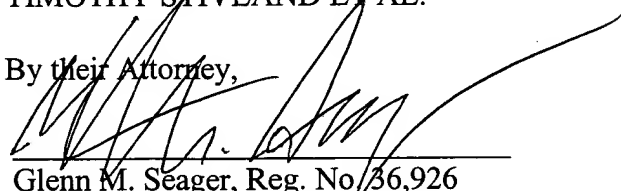
tubular shaft. Due to the exceedingly small size of the catheter shafts involved, this process may be difficult and require a more refined manufacturing process. The creation of an overlap joint, in contrast, involves overlaying substantial surface areas of the two tubes, one on top of the other, and may therefore be considerably easier to perform. Second, due to the greater surface area of the two tubes that is bonded together in an overlap joint, as opposed to a butt joint, the overlap joint may be stronger and less likely to fail. Applicants respectfully submit that Claims 8-9, 11-12, 17-26, 34-37, and 42-46 are patentable over Sirhan et al. in view of Gold et al.

For the reasons given above, Applicants submit that all pending claims are in condition for allowance. Reexamination and reconsideration are respectfully requested. Issuance of a Notice of Allowance in due course is also respectfully requested. If a telephone conference might be of assistance, please contact the undersigned attorney at (612) 677-9050.

Respectfully submitted,

TIMOTHY STIVLAND ET AL.

By their Attorney,


Glenn M. Seager, Reg. No. 36,926
CROMPTON, SEAGER & TUFTE, LLC
331 Second Avenue South
Suite 895
Minneapolis, Minnesota 55401-2246
Tel: (612) 677-9050

Date: June 30, 2000